

SEQUENCE LISTING

<110> Keler, Tibor
Endres, Michael
He, Lizhen
Ramakrishna, Venky

<120> ANTIBODY VACCINE CONJUGATES AND USES
THEREFOR

<130> MXI-301

<150> 60/443979

<151> 2003-01-31

<160> 32

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1407

<212> DNA

<213> Homo sapiens

<400> 1

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<210> 2

<211> 468

<212> PRT

<213> Homo sapiens

<400> 2

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20           25           30
Pro Gly Glu Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Asp Ser Phe
35           40           45
Thr Thr Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu

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50					55					60					
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Pro	Ser	Phe	Gln	Gly	Gln	Val	Thr	Ile	Ser	Ala	Asp	Lys	Ser	Ile	Ser
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Thr	Ala	Tyr	Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met
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Tyr	Tyr	Cys	Thr	Arg	Gly	Asp	Arg	Gly	Val	Asp	Tyr	Trp	Gly	Gln	Gly
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Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe
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Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu
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Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp
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Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu
		180					185					190			
Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser
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Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro
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Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro
			245						250					255	
Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser
		260					265						270		
Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp
	275						280					285			
Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn
	290				295						300				
Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val
305					310					315					320
Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu
			325						330					335	
Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys
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Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr
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Leu	Pro	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr
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Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu
385					390					395					400
Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu
			405					410						415	
Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys
		420					425					430			
Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu
	435					440						445			
Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly
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Lys	Gly	Ser	Ser												
465															

<210> 3
 <211> 348
 <212> DNA
 <213> Homo sapiens

<400> 3
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 cccgggaaag gcctggagtg gatggggatc atctatcctg gtgactctga taccatatac 180

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cggggcgttg actactgggg ccaggaacc ctggtcaccg tctcctca 348

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<210> 4
<211> 116
<212> PRT
<213> Homo sapiens

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<400> 4
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1          5          10          15
Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Asp Ser Phe Thr Thr Tyr
20          25          30
Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35          40          45
Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Ile Tyr Ser Pro Ser Phe
50          55          60
Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65          70          75          80
Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
85          90          95
Thr Arg Gly Asp Arg Gly Val Asp Tyr Trp Gly Gln Gly Thr Leu Val
100         105         110
Thr Val Ser Ser
115

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<210> 5
<211> 702
<212> DNA
<213> Homo sapiens

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accaaggtgg aaatcaaacg tacggtggcg gcgccatctg tcttcattct cccgccatct 420
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agtggtcacag agcaggacag caaggacagc acctacagcc tcagcagcac cctgacgctg 600
agcaaagcag actacgagaa acacaaagtc tacgcctgcg aagtcaccca tcagggcctg 660
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<210> 6
<211> 233
<212> PRT
<213> Homo sapiens

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<400> 6
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Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
20          25          30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile
35          40          45
Ser Arg Trp Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Lys
50          55          60
Ser Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg
65          70          75          80

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Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly
 85 90 95
 Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser
 100 105 110
 Tyr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr
 115 120 125
 Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
 130 135 140
 Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
 145 150 155 160
 Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
 165 170 175
 Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
 180 185 190
 Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
 195 200 205
 Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
 210 215 220
 Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230

<210> 7
 <211> 321
 <212> DNA
 <213> Homo sapiens

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 aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcgg cctgcagcct 240
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 gggaccaagg tggaaatcaa a 321

<210> 8
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 8
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 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Arg Trp
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Lys Ser Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly Leu Gln Pro
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 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
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<210> 9
 <211> 1842
 <212> DNA
 <213> Homo sapiens

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<210> 10
 <211> 613
 <212> PRT
 <213> Homo sapiens

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<400> 10
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Val His Ser Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 20          25          30
Pro Gly Glu Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Asp Ser Phe
 35          40          45
Thr Thr Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
 50          55          60
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Ile Tyr Ser
 65          70          75          80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
 85          90          95
Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
100          105          110
Tyr Tyr Cys Thr Arg Gly Asp Arg Gly Val Asp Tyr Trp Gly Gln Gly
115          120          125
Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
130          135          140
Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
145          150          155          160
Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
165          170          175
Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
180          185          190
Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
195          200          205
Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro

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210	215	220
Ser Asn Thr Lys Val Asp	Lys Lys Val Glu Pro	Lys Ser Cys Asp Lys
225	230	235
Thr His Thr Cys Pro	Pro Cys Pro Ala Pro	Glu Leu Leu Gly Gly Pro
	245	250
Ser Val Phe Leu Phe Pro	Pro Lys Pro Lys Asp	Thr Leu Met Ile Ser
	260	265
Arg Thr Pro Glu Val Thr	Cys Val Val Val Asp	Val Ser His Glu Asp
	275	280
Pro Glu Val Lys Phe Asn	Trp Tyr Val Asp Gly	Val Glu Val His Asn
	290	295
Ala Lys Thr Lys Pro Arg	Glu Glu Gln Tyr Asn	Ser Thr Tyr Arg Val
305	310	315
Val Ser Val Leu Thr Val	Leu His Gln Asp Trp	Leu Asn Gly Lys Glu
	325	330
Tyr Lys Cys Lys Val Ser	Asn Lys Ala Leu Pro	Ala Pro Ile Glu Lys
	340	345
Thr Ile Ser Lys Ala Lys	Gly Gln Pro Arg Glu	Pro Gln Val Tyr Thr
	355	360
Leu Pro Pro Ser Arg Asp	Glu Leu Thr Lys Asn	Gln Val Ser Leu Thr
	370	375
Cys Leu Val Lys Gly Phe	Tyr Pro Ser Asp Ile	Ala Val Glu Trp Glu
385	390	395
Ser Asn Gly Gln Pro Glu	Asn Asn Tyr Lys Thr	Thr Pro Pro Val Leu
	405	410
Asp Ser Asp Gly Ser Phe	Phe Leu Tyr Ser Lys	Leu Thr Val Asp Lys
	420	425
Ser Arg Trp Gln Gln Gly	Asn Val Phe Ser Cys	Ser Val Met His Glu
	435	440
Ala Leu His Asn His Tyr	Thr Gln Lys Ser Leu	Ser Leu Ser Pro Gly
	450	455
Lys Gly Ser Ser Ser Lys	Glu Pro Leu Arg Pro	Arg Cys Arg Pro Ile
465	470	475
Asn Ala Thr Leu Ala Val	Glu Lys Glu Gly Cys	Pro Val Cys Ile Thr
	485	490
Val Asn Thr Thr Ile Cys	Ala Gly Tyr Cys Pro	Thr Met Thr Arg Val
	500	505
Leu Gln Gly Val Leu Pro	Ala Leu Pro Gln Val	Val Cys Asn Tyr Arg
	515	520
Asp Val Arg Phe Glu Ser	Ile Arg Leu Pro Gly	Cys Pro Arg Gly Val
	530	535
Asn Pro Val Val Ser Tyr	Ala Val Ala Leu Ser	Cys Gln Cys Ala Leu
545	550	555
Cys Arg Arg Ser Thr Thr	Asp Cys Gly Gly Pro	Lys Asp His Pro Leu
	565	570
Thr Cys Asp Asp Pro Arg	Phe Gln Asp Ser Ser	Ser Ser Lys Ala Pro
	580	585
Pro Pro Ser Leu Pro Ser	Pro Ser Arg Leu Pro	Gly Pro Ser Asp Thr
	595	600
Pro Ile Leu Pro Gln		
610		

<210> 11
 <211> 1325
 <212> DNA
 <213> Homo sapiens

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 agtcaccatc acttgctcgg cgagtcaggg tattagcagg tggtagcct ggtatcagca 180
 gaaaccagag aaagccccta agtcctgat ctatgctgca tccagtttgc aaagtggggt 240
 cccatcaagg ttcagcggca gtggatctgg gacagatttc actctcacca tcagcggcct 300

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tgataccata tacagcccgt ctttccaagg ccaggtcacc atctcagccg acaagtccat 660
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<210> 12
<211> 411
<212> PRT
<213> Homo sapiens

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<400> 12
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1          5          10          15
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20          25          30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile
 35          40          45
Ser Arg Trp Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Lys
 50          55          60
Ser Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg
 65          70          75          80
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly
 85          90          95
Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser
100          105          110
Tyr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Gly Gly
115          120          125
Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln
130          135          140
Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu Ser Leu Arg
145          150          155          160
Ile Ser Cys Lys Gly Ser Gly Asp Ser Phe Thr Thr Tyr Trp Ile Gly
165          170          175
Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met Gly Ile Ile
180          185          190
Tyr Pro Gly Asp Ser Asp Thr Ile Tyr Ser Pro Ser Phe Gln Gly Gln
195          200          205
Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr Leu Gln Trp
210          215          220
Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys Thr Arg Gly
225          230          235          240
Asp Arg Gly Val Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
245          250          255
Ser Gly Ser Thr Gly Gly Gly Gly Ser Ser Ser Lys Glu Pro Leu Arg
260          265          270
Pro Arg Cys Arg Pro Ile Asn Ala Thr Leu Ala Val Glu Lys Glu Gly
275          280          285
Cys Pro Val Cys Ile Thr Val Asn Thr Thr Ile Cys Ala Gly Tyr Cys
290          295          300
Pro Thr Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln

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305          310          315          320
Val Val Cys Asn Tyr Arg Asp Val Arg Phe Glu Ser Ile Arg Leu Pro
          325          330          335
Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu
          340          345          350
Ser Cys Gln Cys Ala Leu Cys Arg Arg Ser Thr Thr Asp Cys Gly Gly
          355          360          365
Pro Lys Asp His Pro Leu Thr Cys Asp Asp Pro Arg Phe Gln Asp Ser
          370          375          380
Ser Ser Ser Lys Ala Pro Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu
385          390          395          400
Pro Gly Pro Ser Asp Thr Pro Ile Leu Pro Gln
          405          410

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<210> 13
<211> 5
<212> PRT
<213> Homo sapiens

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<400> 13
Thr Tyr Trp Ile Gly
 1              5

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<210> 14
<211> 17
<212> PRT
<213> Homo sapiens

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<400> 14
Ile Ile Tyr Pro Gly Asp Ser Asp Thr Ile Tyr Ser Pro Ser Phe Gln
 1              5              10              15
Gly

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<210> 15
<211> 7
<212> PRT
<213> Homo sapiens

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<400> 15
Gly Asp Arg Gly Val Asp Tyr
 1              5

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<210> 16
<211> 11
<212> PRT
<213> Homo sapiens

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<400> 16
Arg Ala Ser Gln Gly Ile Ser Arg Trp Leu Ala
 1              5              10

```

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<210> 17
<211> 7
<212> PRT
<213> Homo sapiens

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<400> 17
Ala Ala Ser Ser Leu Gln Ser

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1 5

<210> 18
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 18
 Gln Gln Tyr Asn Ser Tyr Pro Arg Thr
 1 5

<210> 19
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 19
 Ser Lys Glu Pro Leu Arg Pro Arg Cys Arg Pro Ile Asn Ala Thr Leu
 1 5 10 15
 Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr Val Asn Thr Thr
 20 25 30
 Ile Cys Ala Gly Tyr Cys Pro Thr Met Thr Arg Val Leu Gln Gly Val
 35 40 45
 Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr Arg Asp Val Arg Phe
 50 55 60
 Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val
 65 70 75 80
 Ser Tyr Ala Val Ala Leu Ser Cys Gln Cys Ala Leu Cys Arg Arg Ser
 85 90 95
 Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu Thr Cys Asp Asp
 100 105 110
 Pro Arg Phe Gln Asp Ser Ser Ser Lys Ala Pro Pro Pro Ser Leu
 115 120 125
 Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr Pro Ile Leu
 130 135 140

<210> 20
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 20
 Asp Val Arg Phe Glu Ser Ile Arg Leu
 1 5

<210> 21
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 21
 Tyr Arg Asp Val Arg Phe Glu Ser Ile
 1 5

<210> 22
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 22
 Leu Arg Pro Arg Cys Arg Pro Ile Asn
 1 5

<210> 23
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 23
 Ser Arg Leu Pro Gly Pro Ser Asp Thr
 1 5

<210> 24
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 24
 Cys Arg Pro Ile Asn Ala Thr Leu Ala
 1 5

<210> 25
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 25
 Leu Pro Gly Pro Ser Asp Thr Pro Ile
 1 5

<210> 26
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 26
 Cys Pro Arg Gly Val Asn Pro Val Val
 1 5

<210> 27
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 27
 Arg Pro Ile Asn Ala Thr Leu Ala Val
 1 5

<210> 28
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 28
 Val Ala Leu Ser Cys Gln Cys Ala Leu
 1 5

<210> 29
 <211> 294
 <212> DNA
 <213> Homo sapiens

<400> 29
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 cccgggaaag gcctggagtg gatggggatc atctatcctg gtgactctga taccagatac 180
 agcccgtcct tccaaggcca ggtcaccatc tcagccgaca agtccatcag caccgcctac 240
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<210> 30
 <211> 98
 <212> PRT
 <213> Homo sapiens

<400> 30
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 Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30
 Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
 35 40 45
 Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe
 50 55 60
 Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
 65 70 75 80
 Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
 85 90 95
 Ala Arg

<210> 31
 <211> 285
 <212> DNA
 <213> Homo sapiens

<400> 31
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 atcacttgtc gggcgagtc gggatattag agctgggttag cctgggtatca gcagaaacca 120
 gagaaagccc ctaagtccct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctggagcct 240
 gaagattttg caacttatta ctgccaacag tataatagtt accct 285

<210> 32
 <211> 95
 <212> PRT
 <213> Homo sapiens

<400> 32
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 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Lys Ser Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Pro
 85 90 95